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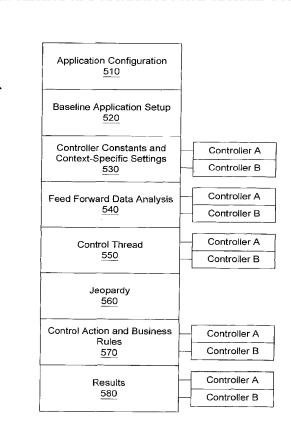
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(54) Title: METHOD AND APPARATUS FOR INTEGRATING MULTIPLE PROCESS CONTROLLERS



(57) Abstract: A method for controlling a manufacturing system includes processing workpieces in a plurality of tools (120, 125); initiating a baseline control script (152, 154) for a selected tool (120, 125) of the plurality of tools (120, 125); providing context information for the baseline control script (152, 154); determining a tool type based on the context information; selecting a group of control routines for the selected tool (120, 125) based on the tool type; determining required control routines from the group of control routines based on the context information; and executing the required control routines to generate control actions for the selected tool (120, 125). A manufacturing system incldes a plurality of tools (120, 125) adapted to process workpieces, a control execution manager (150), and a control executor (220). The control execution manager (150) is adapted to initiate a baseline control script (152, 154) for a selected tool (120, 125) of the plurality of tools (120, 125) and provide context information for the baseline control script (152, 154). The control executor (220) is adapted to execute the baseline control script (152, 154), determine a tool type based on the context information, select a group of control routines for the selected tool (120, 125) based on the tool type, determine required control routines from the group of control routines based on the context information, and execute the required control routines to generate control actions for the selected tool (120, 125).



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INTERNATIONAL SEARCH REPORT

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A. CLASSI IPC 7	FICATION OF SUBJECT MATTER G05B19/418 G05B19/4093			
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Documental	tion searched other than minimum documentation to the extent that	such documents are includ	ed in the fields searched	
Electronic d	ata base consulted during the international search (name of data b	ase and, where practical, s	earch terms used)	
EPO-In	ternal ·			
C. DOCUM	ENTS CONSIDERED TO BE RELEVANT			
Category °	Citation of document, with indication, where appropriate, of the re	elevant passages	Relevant to claim No.	
Х	GB 2 329 041 A (MITSUBISHI ELECTRIC CORP) 10 March 1999 (1999-03-10) page 23 -page 44		1,4-6,9, 10	
Υ	figures 1-16		2,3,7,8	
Y	WO 99 64940 A (ALLEN ROBERT F ;J RICARDO T (US); SPEEDFAM IPEC CO 16 December 1999 (1999-12-16) page 16, line 15 -page 17, line	RP (US))	2,7	
Y	US 4 698 766 A (ROBERTS PETER E 6 October 1987 (1987-10-06) column 2, line 1-11 column 4, line 48-52 column 8, line 52 -column 9, line figures 1,2		3,8	
		-/		
χ Furt	ther documents are listed in the continuation of box C.	X Patent family m	embers are listed in annex.	
	ategories of cited documents:	<u> </u>	shed after the international filling date	
consi	ent defining the general state of the art which is not dered to be of particular relevance document but published on or after the international	or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention		
filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)		cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the		
other	nent referring to an oral disclosure, use, exhibition or means lent published prior to the international filing date but than the priority date claimed		ned with one or more other such docu- nation being obvious to a person skilled If the same patent family	
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Inte nal Application No
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C.(Continua	ation) DOCUMENTS CONSIDERED TO BE RELEVANT					
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.				
A	EP 1 072 967 A (APPLIED MATERIALS INC) 31 January 2001 (2001-01-31) page 10 -page 17	1-10				

INTERNATIONAL SEARCH REPORT

Information on patent family members

Inte al Application No
PCT/US 01/47271

Patent document cited in search report		Publication Patent family member(s)			Publication date
GB 2329041	A	10-03-1999	JP DE GB HK KR US	10086040 A 19725101 A1 2314174 A ,B 1004961 A1 252460 B1 5870306 A	07-04-1998 02-01-1998 17-12-1997 28-04-2000 15-04-2000 09-02-1999
WO 9964940	A	16-12-1999	US DE GB JP TW WO	6292708 B1 19983295 T0 2354844 A 2002517916 T 486770 B 9964940 A1	18-09-2001 13-06-2001 04-04-2001 18-06-2002 11-05-2002 16-12-1999
US 4698766	A	06-10-1987	DE EP GB JP	3581000 D1 0162670 A2 2158970 A ,B 61019548 A	07-02-1991 27-11-1985 20-11-1985 28-01-1986
EP 1072967	Α	31-01-2001	EP JP US	1072967 A2 2001143981 A 2002156548 A1	31-01-2001 25-05-2001 24-10-2002